



**Billing Code: 4910-60-P**

**DEPARTMENT OF TRANSPORTATION**

**Pipeline and Hazardous Materials Safety Administration**

**[Docket No. PHMSA-2016-0078; Notice No. 2016-14]**

**Hazardous Materials: Use of DOT Specification 39 Cylinders for Liquefied Flammable Compressed Gas**

**AGENCY:** Pipeline and Hazardous Materials Safety Administration (PHMSA), DOT.

**ACTION:** Safety advisory notice.

**SUMMARY:** PHMSA is issuing this safety advisory notice to inform offerors and users of DOT Specification 39 (DOT-39) cylinders that DOT-39 cylinders with an internal volume exceeding 75 cubic inches (in<sup>3</sup>)(1.23 L) should not be filled with liquefied flammable compressed gas. PHMSA maintains filling or transporting DOT-39 cylinders with an internal volume exceeding 75 in<sup>3</sup> (1.23 L) is not safe.

**FOR FURTHER INFORMATION CONTACT:** Refaat Shafkey, General Engineer, Engineering and Research Division, Office of Hazardous Materials Safety, Pipeline and Hazardous Materials Safety Administration, U.S. Department of Transportation, 1200 New Jersey Ave., S.E., Washington, DC 20590. Telephone: (202) 366-4545 or, via email: [refaat.shafkey@dot.gov](mailto:refaat.shafkey@dot.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Public Action Requested**

PHMSA advises offerors of DOT-39 cylinders having an internal volume exceeding 75 cubic inches ( $\text{in}^3$ )(1.23 L) that such cylinders should not be filled with liquefied flammable compressed gas. PHMSA further advises the public not to use any DOT-39 cylinder with an internal volume greater than 75  $\text{in}^3$  (1.23 L) containing a liquefied flammable compressed gas.

### **Safety Concern**

The release of a liquefied flammable compressed gas from or rupture of such a cylinder having an internal volume exceeding 75  $\text{in}^3$  (1.23 L) is a safety concern that could result in extensive property damage, serious personal injury, or even death. A liquefied flammable compressed gas has a stored energy that is several times greater than that of a non-liquefied compressed gas. Further, a DOT-39 cylinder can have a volume of up to 1,526  $\text{in}^3$  (25 L) at a service pressure of 500 psig or less and, as such, can have up to 22 times the stored energy of a DOT-39 cylinder limited to 75  $\text{in}^3$  (1.23 L). Additionally, because of the design specifications that allow for thinner walls when used at lower pressure, the cylinders may be at greater risk from corrosion or puncture. Given the known risks associated with cylinders that are filled with liquefied flammable compressed gases, PHMSA is issuing this safety advisory notice to inform offerors and users of DOT-39 cylinders that cylinders with an internal volume of 75  $\text{in}^3$  (1.23 L) or more should not be filled with liquefied flammable compressed gas.

## Background

This safety advisory notice is being issued in part because of concern over confusion about the regulatory requirements when using DOT-39 cylinders for liquefied compressed gases. Historically, the Hazardous Materials Regulations (HMR; 49 CFR parts 171-180) limited the internal volume of a DOT-39 specification cylinder to 75 in<sup>3</sup> (1.23 L) when used for certain liquefied flammable compressed gases. This size limitation applied when DOT-39 cylinders were used for gases that were subject to Note 9 following the table at § 173.304(a)(2) or liquefied petroleum gas as addressed in § 173.304(d)(3) (The table is currently located at § 173.304a).

In an October 30, 1998 notice of proposed rulemaking (NPRM), the Research and Special Programs Administration (RSPA)—the predecessor agency to PHMSA—proposed to extend the 75 in<sup>3</sup> (1.23 L) volume limitation of DOT-39 cylinders to all liquefied flammable compressed gases by revising § 173.304 to delete Note 9 from the table at § 173.304(a)(2) and adding §§ 173.304a and 173.304b.<sup>1</sup> RSPA received several comments in opposition to extending the limit to all liquefied flammable compressed gases which would have been codified in § 173.304a(a)(3). RSPA published a final rule on August 8, 2002 and, based on the opposing comments, decided not to extend the 75 in<sup>3</sup> (1.23 L) limitation to all liquefied flammable compressed gases in a DOT-39 cylinder at that time. However, in the process of publishing the final rule, the agency inadvertently omitted the 75 in<sup>3</sup> (1.23 L) limitation for liquefied flammable compressed gas and liquefied petroleum gas.<sup>2</sup>

On November 13, 2014, PHMSA accepted a petition for rulemaking (P-1622) from Worthington Cylinders to address this error in a rulemaking. On July 26, 2016, PHMSA

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<sup>1</sup> NPRM - Hazardous Materials: Requirements for DOT Specification Cylinders (HM-220D) [63 FR 58460]

<sup>2</sup> Final Rule - Hazardous Materials: Requirements for Maintenance, Requalification, Repair and Use of DOT Specification Cylinders (HM-220D) [67 FR 51625]

published in the *Federal Register* an NPRM titled, “Hazardous Materials: Miscellaneous Amendments Pertaining to DOT Specification Cylinders (RRR),” [81 FR 48977; Docket No. PHMSA-2011-0140 (HM-234)<sup>3</sup>] that again proposes to extend the limit on the internal volume of DOT-39 cylinders to use with all liquefied flammable compressed gases, thus correcting the inadvertently omitted size limitation and expanding the applicability to capture those liquefied flammable compressed gases (e.g., difluoromethane (Refrigerant gas R 32)) either not reflected in the § 173.304a(a)(2) table or not considered a liquefied petroleum gas.

Issued in Washington, DC on December 5, 2016.

**William S. Schoonover,**  
Acting Associate Administrator for Hazardous Materials Safety,  
Pipeline and Hazardous Materials Safety Administration.

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<sup>3</sup> <https://www.gpo.gov/fdsys/pkg/FR-2016-07-26/pdf/2016-16689.pdf>

